Fact Sheet on the Proposed Amendment to the Environmental Cooperative Agreement between Packaging Corporation of America and Wisconsin Department of Natural Resources

Following a public comment period, the Wisconsin Department of Natural Resources (DNR) will determine whether or not to amend the Environmental Cooperative Agreement (Agreement) that it signed with Packaging Corporation of America (PCA) on September 10, 2002. Both the original Agreement and the proposed Amendment were developed under Wisconsin's Environmental Cooperation Pilot Program pursuant to Section 299.80, Wis. Statutes.

Under the proposed amendment, PCA agrees to voluntarily monitor chemical oxygen demanding substances, evaluate the micronutrient balance in its wastewater treatment plant's (WTP) anaerobic system, and explore the feasibility of enhanced anaerobic basin thermal control. PCA will also conduct a trial on a new type of WTP residuals dewatering technology, and consider ink product alternatives in cooperation with the PCA Colby Boxplant. DNR agrees to reduce the monitoring frequency for biological oxygen demanding substances in exchange for these beyond compliance actions.

Facility Background

Packaging Corporation of America, headquartered in Lake Forest, Illinois, owns and operates a stand-alone, semi-chemical, integrated pulp and paper mill located at N9090 County Road E in Tomahawk, Wisconsin. The Tomahawk mill manufactures over one-half million tons of corrugating medium that is utilized in the containerboard industry. The mill, built in 1920 by the Pride Pulp and Paper Company, originally manufactured kraft paper. The mill discontinued kraft pulping in 1953 when it switched to semi-chemical pulping. The mill and its ancillary operations occupy approximately 400 acres. The facility employs 450 people, and is the largest manufacturing employer in Lincoln County. The Tomahawk facility operates an onsite state-of-the-art anaerobic wastewater treatment plant. PCA is a leader in waste minimization and pollution prevention activities and has won numerous environmental awards.

During the first year of the Agreement, PCA demonstrated impressive results:

- Doubled the level of control of methanol releases from pulp mill sources over and above what would have been achieved under the Maximum Achievable Control Technology-I rule, as promulgated.
- Maximized the use of biomass fuel.
- Developed an environmental management system designed to continuously improve the facility's environmental performance by establishing discrete environmental goals and performance objectives.
- Evaluated water treatment methods designed to minimize phosphorus discharges.
- Increased employee/community understanding of the facility's environmental objectives and performance.

Amendment Discussion and Commitments

In 1996, U.S. EPA issued a guidance memorandum that prescribes reduced monitoring frequencies based on performance for facilities with a National Pollutant Discharge Elimination System (NPDES) Permit. The guidance document applies to major and minor NPDES permitted facilities that demonstrate an ability to consistently reduce pollutants in their discharge to levels below those necessary to meet existing permit requirements. To be eligible for consideration a facility must have the following:

- A clean enforcement history (i.e., no criminal, civil or administrative actions)
- No significant noncompliance violations for applicable parameters during the past two years
- No effluent violations of selected critical parameters in the last year
- Discharges should be 25% or less of the permitted discharge levels
- Have at least one permit cycle (5 years) of data on record

The EPA guidance document allows for a facility of PCA's level of performance to reduce their monitoring frequency from 7/week to 1/week (Table 1, Guidance). PCA's current NPDES Permit (NPDES Permit No. WI-0002810-7-0) came up for renewal in 2003. During discussions preceding the permit reissuance, DNR considered a request from PCA regarding reduced monitoring for two parameters, Total Suspended Solids (TSS) and Five Day Biochemical Oxygen Demand (BOD_5). PCA's request was based on the following:

- PCA satisfies the minimum eligibility requirements detailed in EPA's guidance document.
- For the 2-year period Jan 2001 – Jan 2003 TSS and BOD_5 discharges averaged 15.0% and 21.6% of their monthly average discharge limitations, respectively.
- Based on U.S. EPA's statistical model that considers the variability in effluent quality and the ratio of the long-term average discharge/permit limit the probability of a permit exceedance under a reduced monitoring scenario was determined to be effectively zero.

DNR internal guidance, modeled after the U.S. EPA guidance document, allows qualifying facilities in the Wisconsin NPDES program the size of PCA to reduce monitoring from 7x/week to 5x/week. DNR was reluctant to approve PCA's request in that it would establish a regulatory precedent in conflict with Wisconsin guidance. The Agreement, however, provides DNR the flexibility necessary to experiment with reduced monitoring on a very restricted basis (i.e., one facility), for only one parameter (i.e., BOD_5), and to do so outside the NPDES permit program thereby avoiding the precedence concern. In the amendment:

- DNR commits to allow PCA to reduce BOD_5 monitoring from daily to once weekly (Wednesday analysis) between November 1 and April 30. BOD_5 will be analyzed twice weekly (Wednesday/Friday) from May 1 to October 31. Monitoring will occur on a daily basis during periods between May 1 and October 31 whenever:
  (a) The Wisconsin River is ≤ 1600 cfs and river temperature > 26.7^{o}C
  (b) The Wisconsin River flows is ≤ 1200 cfs and river temperature > 23.4^{o}C
  (c) The Wisconsin River flow is ≤ 800 cfs and the river temperature > 20.1^{o}C

- PCA commits to conduct daily monitoring during unusual events (e.g., a spill) that could impact the treatment system performance.

- If there is a BOD_5 effluent limit violation, PCA commits to resuming daily monitoring for a period of two years.

Due to the unique design of PCA's WTP, DNR has expressed an interest in understanding the relationship between BOD_5 and chemical oxygen demand (COD).

- PCA commits to conduct weekly COD analyses on raw mill effluent, the anaerobic basin discharge, and the final effluent for a period of one year. Samples will be collected on Wednesdays to accommodate BOD_5/COD data correlation. A report that evaluates COD reduction across the WTP as well as the statistical relationship (if any) between COD and BOD_5 in the influent and final discharges will be submitted to DNR on a quarterly basis (within 30 days of the conclusion of each quarter). After 1 year, DNR and PCA will evaluate the accumulated data and mutually agree to either maintain or modify the COD sampling frequency

PCA is interested in understanding the impact that micronutrients have on anaerobic treatment efficiency, biogas generation, and biosolids settleability.

- PCA will evaluate existing micronutrient concentrations in the anaerobic digester supernatant with a specific focus on iron, nickel and cobalt. Baseline concentrations will be compared against (recommended) published literature concentrations. If deficiencies are noted, PCA will add supplemental dosages of the appropriate micronutrients and evaluate the impact of micronutrient supplementation on COD reduction efficiency, biogas generation rate, and biosolids settleability. PCA will issue a report to DNR summarizing its findings by June 30, 2005.

Optimization of existing WTP primary and secondary solids dewatering equipment has been an ongoing effort at PCA.

- PCA commits to conducting a trial within the next 12 months that evaluates the performance of a residuals dewatering technology marketed by a European firm. PCA's findings will be shared with DNR. If the trial is deemed successful, PCA will explore the feasibility of installing a dewatering unit to augment existing solids dewatering capability.

- PCA commits to evaluating the value and feasibility of installing insulation on the exterior walls of the anaerobic basins as a means of attenuating the variation in operating temperature associated with seasonal changes.

- In cooperation with the PCA Colby Boxplant, Tomahawk Mill commits to exploring the feasibility of eliminating the practice of receiving copper-contaminated wastewater from the Colby Boxplant via ink product substitution.

For more information:

Go to the Bureau of Cooperative Environmental Assistance website at: http://www.dnr.state.wi.us/org/caer/cea/ecpp/. Or contact Laurel Sukup at: (715) 365-8936 or e-mail Laurel.Sukup@dnr.state.wi.us.

Pub #CO- 310 01/04